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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/723,055

11/25/2003

John M. Deegan

POU920030144US1

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08/09/2006

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EXAMINER

BAKER, STEPHEN M

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/723,055	Applicant(s) DEEGAN ET AL.	
	Examiner Stephen M. Baker	Art Unit 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 8 and 10-17 is/are rejected.
- 7) ☒ Claim(s) 3,5-7 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>112503</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “drivers” recited by claims 2 and 10 and the various “means” recited in claim 17 must be shown or the features canceled from the claims. No new matter should be entered.
2. The drawings are objected to because: Regarding Fig. 1, the bracket below “ARRAY OF x4” apparently designates the width of a “symbol slice” and should be labeled as such. It’s not understood why two clock lines are shown for each symbol slice and one of the clock lines only connects to two of the four chips in each symbol slice.
3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

Art Unit: 2133

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

In paragraph 0007, applicant describes a "memory subsystem comprising: a means for configuring a memory device array into symbol slices ..., a means for establishing a plurality of command buses" etc. however what is apparently shown is apparently a "memory subsystem design method comprising: a step of configuring a memory device array into symbol slices ..., a step of establishing a plurality of command buses" etc.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2, 4, 8 and 10-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2, "further including said command register exhibiting sufficient command bus drivers to support each command bus" is unclear and apparently not idiomatic English; it is not understood why it is said the command register is "exhibiting" drivers.

Regarding claims 4 and 12, describing an error correction code as an "existing error correction code scheme" does not appear to add any definite further limit to the error correction code.

Regarding claim 8, "said error correction code" apparently should be "said other error correction code".

Regarding claim 10, "The method of command bus redundancy" apparently should be "A method for providing command bus redundancy" or the like.

Regarding claim 11, "communicating a memory controller" is unclear; "said error correction code" apparently should be "another error correction code".

Regarding claim 13, "communicating a memory interface device" is unclear.

Regarding claim 15, "communicating a command register" and "communicating a memory controller" are unclear.

Regarding claim 16, "communicating a memory interface device" is unclear.

Regarding claim 17, a set of steps of a memory subsystem design method is apparently being mis-described as a set of means of a memory subsystem.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 4, 10, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,981,095 to MacLaren *et al* (hereafter "MacLaren").

MacLaren discloses a "memory subsystem" wherein data is interleaved across a plurality of segments 24, with each segment having its own quadword ECC code and with one or more parity segments providing a form of RAID-type ECC (column 5, lines 9-20) over the plurality of segments. Accordingly, each segment is a "symbol slice" of a RAID-type "error correction code packet." Each segment includes one or more DIMMs. A plurality of command buses (MNET buses) 22 are provided, one for each segment. A single host/data controller 16, 18 coupled to the memory controllers 20 for each segment drives each command bus, providing "command repowering" (column 18, lines 61-63, etc.). The host/data controller 16, 18 apparently requires an address register serving as a "command register" coupled to the command buses 22, however MacLaren does not mention an address register in the host/data controller 16, 18. It would have been obvious to a person having ordinary skill in the art to realize MacLaren's host/data controller 16, 18 with logic including an address register. Such a realization would have been obvious because an address register is presumably required to interface between the command buses 22 of the memory subsystem and the addresses produced by

Art Unit: 2133

those devices, such as CPUs 12, sending read and write requests to the memory subsystem.

Allowable Subject Matter

9. Claims 2, 4, 8, 11 and 13-16 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. Claims 3, 5-7 and 9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (571) 272-3814. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2133

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Stephen M. Baker
Primary Examiner
Art Unit 2133

smb